

### REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-8 remain active. Claim 1 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Claims 1-8 were rejected under 35 U.S.C. § 103(a) as unpatentable over WO 01/77412 to Tojo et al.<sup>1</sup> (herein "Tojo") in view of U.S. Patent No. 4,790,859 to Marumo et al. (herein "Marumo") and Japanese Publication No. 2000-160390 to Fumio et al. (herein "Fumio").

The Examiner rejected Claim 1 under 35 U.S.C. § 112, second paragraph, as being indefinite since Claim 1 recited "at least two compartments in the fluorine gas generator" but also recited using "a compartment" to house the electrolyzer, "a compartment" to house the first adsorption unit, and "a compartment" to house the second adsorption unit. It was unclear to the Examiner if the "a compartment" was directed to the same compartment, or two, or three different compartments, rendering Claim 1 indefinite. The claim was interpreted by the Examiner to mean three different compartments, each separately housing the electrolyzer, the first adsorption unit and the second adsorption unit. If this is what applicants intended to claim, the Examiner suggest to amend the claim to "a first compartment containing said electrolyzer," "a second compartment containing a first adsorption unit," and "a third compartment containing a second adsorption unit."

Applicants appreciate the Examiner's helpful suggestion and have so amended Claim 1. In addition, to further clarify the claim, Claim 1 has been amended to change "said box-shaped body being partitioned into at least two compartments" to "said box-shaped body

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<sup>1</sup> In understanding the teachings of WO 01/77412 applicants have relied on U.S. Patent No. 6,818,105 B2 which is an English language version of WO 01/77412.

being partitioned into at least three compartments.” Withdrawal of the rejection of Claim 1 under 35 U.S.C. § 112, second paragraph, is requested.

The rejection of Claims 1-8 under 35 U.S.C. § 103(a) is traversed for the reasons which follow.

Claim 1 recites that the fluorine gas generator includes, inter alia, a box-shaped body partitioned into three compartments wherein the first compartment contains an electrolyzer; the second compartment contains a first adsorption unit that adsorbs hydrogen fluoride from fluorine gas discharged from an anode chamber of the electrolyzer; and the third compartment contains a second adsorption unit that adsorbs hydrogen fluoride from hydrogen gas discharged from a cathode chamber of the electrolyzer. Similarly, Claim 2 recites that the fluorine gas generator includes, inter alia, a box-shaped body comprising three compartments, a first compartment containing an electrolyzer, a second compartment containing a first adsorption unit that adsorbs hydrogen fluoride from the fluorine gas discharged from the anode chamber of the electrolyzer, and a third compartment containing a second adsorption unit that adsorbs hydrogen fluoride from the hydrogen gas discharged from the cathode chamber of the electrolyzer.<sup>2</sup>

Turning now to the applied prior art, Tojo discloses an apparatus for generating fluorine gas. As stated in the Final Office Action<sup>3</sup>, Tojo does not explicitly teach the compartments as set forth in the claims. The Office Action argues that it would have been obvious to one of ordinary skill in the art to have split the fluorine gas generator of Tojo into three different compartments to avoid cross contamination.<sup>4</sup> However, the Final Office Action does not disclose any prior art in which a fluorine gas generator is split into three different compartments comprising one for the electrolyzer, one for the post-treatment

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<sup>2</sup> Claims 3-8 depend either directly or indirectly from Claim 2.

<sup>3</sup> Final Office Action, first paragraph on page 4, lines 2-3.

<sup>4</sup> Final Office Action, first paragraph on page 5, lines 1-5.

process of the hydrogen gas from the cathode chamber and one for the post-treatment process of the fluorine gas produced from the anode chamber as the claims require.

Marumo does not teach the claimed three separate compartments, and the Final Office Action does not argue that Marumo does. Instead, the Examiner relies on Fumio to suggest the claimed three separate compartments. Fumio teaches placing an electrochemical plating device and the control system in separate chambers in order to avoid contamination of the electrochemical plating device when the control system undergoes maintenance work. From this teaching of Fumio, the Examiner concludes that it would have been obvious to one of ordinary skill in the art to have incorporated the multi-compartment housing of Fumio into the apparatus of Tojo to house the electrolyzer, the first adsorption unit and the second adsorption unit separately in order to avoid cross contamination.<sup>5</sup>

Applicants submit there was no suggestion or motivation of the knowledge generally available to one of the ordinary skill in the art to modify Tojo to include **three** separate compartments as set forth in independent Claims 1 and 2. As discussed in the last paragraph bridging pages 2-3 of the specification, one of the problems the claimed invention is meant to solve is to provide a fluorine gas generator with which the gases used or generated can be prevented from mixing together as far as possible in case of gas leakage and can be treated safely without allowing them to escape to the outside and with which maintenance, exchange and other operations can be carried out with ease. The claimed invention accomplishes this by providing a box-shaped body divided into **three** separate compartments thereby separating the electrolyzer, the first adsorption unit, and the second adsorption unit, as discussed in the last paragraph bridging pages 3-4 of the specification. Thus, any gas leaking into one compartment will not mix with gas that may leak into another compartment. Therefore, a substantially single component gas can be treated in each compartment and improvements in

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<sup>5</sup> Final Office Action, first paragraph on page 5, lines 1-5.

safety and maintenance can be achieved. These improvements would not have been obvious from the applied prior art to one of ordinary skill in the art. At best, the teachings of Fumio may have made it obvious at the time the invention was made to a person having ordinary skill in the art to have housed Tojo's electrolyzer separately from the first adsorption unit and the second adsorption unit to avoid contamination of the electrolyzer when the adsorption units undergo maintenance work. However, the teachings of Fumio would not have made it obvious at the time the invention was made to a person having ordinary skill in the art to have housed Tojo's electrolyzer separately from the first adsorption unit and the second adsorption unit and to have further housed Tojo's first adsorption unit separately from the second adsorption unit. Thus, Applicants respectfully submit the Final Office Action has not provided a *prima facie* case of obviousness with regard to independent Claims 1 and 2. Accordingly, Applicants respectfully request that the rejection of Claims 1-8 under 35 U.S.C. § 103(a) be withdrawn.

Regarding claim 3, while Tojo teaches an exhaust opening 19 to provide controlled atmosphere for the interior of the fluorine gas generator, there is no teaching or suggestion in the applied prior art to have provided a suction opening to each of the three compartments of the fluorine gas generator.

Regarding claim 4, while Tojo teaches a buffer tank 44 and a pressurizer 42, there is no teaching or suggestion in the applied prior art to have located these items in the claimed second compartment.

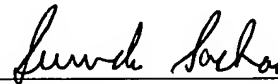
Regarding claim 5, while Tojo teaches that a heater 12 is used to provide proper heating of the electrolytic cell 2, there is no teaching or suggestion in the applied prior art to have used a water heating device for feeding warm water to the electrolytic cell 2 for heating the electrolytic cell 2.

Regarding claims 6-8, there is no teaching or suggestion in the applied prior art to have mounted either (1) the electrolyzer of Tojo on a transporting member; (2) the adsorption columns of Tojo's first adsorption unit on a transporting member; or (3) the adsorption columns of Tojo's second adsorption unit on a transporting member.

In view of the foregoing, an early and favorable Office Action is believed to be in order and the same is hereby respectfully requested.

Respectfully submitted,

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